

DOCUMENT RESUME

ED 215 800

RC 013 265

AUTHOR Garcia, Homer D. C.
TITLE Bilingualism, Confidence, and College Achievement.
Report No. 318.
INSTITUTION Johns Hopkins Univ., Baltimore, Md. Center for Social
Organization of Schools.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
PUB DATE Nov 81
GRANT NIE-G-80-0113
NOTE 28p.

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; *Aspiration; Bilingualism;
*College Students; Family Income; *Family Influence;
Language Fluency; Locus of Control; Mexican
Americans; *Psychological Characteristics; Self
Esteem; Spanish Speaking
IDENTIFIERS *Chicanos; *Cultural Maintenance; Texas

ABSTRACT

In 1977, an exploratory survey examined the relative effects of family and offspring cultural maintenance upon offspring psychological characteristics and college achievement, using the responses of 1,573 Chicano college students from Texas to a mailed questionnaire. The hypothesis was that holding family income constant, high family Spanish usage and/or high offspring Spanish fluency would result in higher offspring self-esteem, more ambitious socioeconomic plans, greater assuredness of achieving such plans, greater locus of control, and higher grades in college. A 41-page exploratory multipurpose questionnaire was developed to obtain data on the subjects' family income, Spanish usage in the home, Spanish fluency, self-esteem, educational and income plans, assuredness of achieving plans, locus of control, and college grade-point average. Respondents ranged from 17 to 62 years of age, with the median age of 22. Path analysis data revealed that high family Spanish usage yielded both negative direct effects and positive indirect effects on the psychological and achievement characteristics of the offspring. The negative effects were partially offset or sometimes reversed when such homes promoted the bilingualism of children. However, it was an offspring's bilingualism which was a more consistent and stronger determiner in the production of positive effects. (NQA)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED215800

RE
3122182

Center
for Social
Organization
of Schools

Report No. 318
November 1981
BILINGUALISM, CONFIDENCE AND COLLEGE ACHIEVEMENT
Homer D.C. Garcia

The
Johns Hopkins
University

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

This document has been reproduced as
received from the person or organization
originating it.
Minor changes have been made to improve
reproduction quality.

Points of view or opinions stated in this docu-
ment do not necessarily represent official NIE
position or policy.

STAFF

Edward L. McDill, Co-Director

James M. McPartland, Co-Director

Karl L. Alexander

Charles H. Beady

Henry J. Becker

Jomills H. Braddock, II

Ruth H. Carter

Martha A. Cook

Robert L. Crain

Doris R. Entwisle

Joyce L. Epstein

Gail M. Fennessey

James J. Fennessey

Homer D. C. Garcia

Denise C. Gottfredson

Gary D. Gottfredson

Linda S. Gottfredson

Stephen Hansell

Edward J. Harsch

John H. Hollifield

Barbara J. Hucksoll

Nancy L. Karweit

Hazel G. Kennedy

Marshall B. Leavey

Nancy A. Madden

David J. Mangefrida

Julia B. McClellan

Anne McLaren

Phillip R. Morgan

Robert G. Newby

Deborah K. Ogawa

James M. Richards, Jr.

Donald C. Rickert, Jr.

Laura Hersch Salganik

Robert E. Slavin

Gail E. Thomas

William T. Trent

Carol A. Weinreich

BILINGUALISM, CONFIDENCE, and COLLEGE ACHIEVEMENT

Grant No. NIE-G-80-0113

Homer D. C. Garcia

Report No. 318

November 1981

Published by the Center for Social Organization of Schools, supported in part as a research and development center by funds from the United States National Institute of Education, Department of Education. The opinions expressed in this publication do not necessarily reflect the position or policy of the National Institute of Education, and no official endorsement by the Institute should be inferred.

Center for Social Organization of Schools
The Johns Hopkins University
3505 North Charles Street
Baltimore, MD 21218

Printed and assembled by the Centers for the Handicapped
Silver Spring, MD

Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through five programs to achieve its objectives. The Studies in School Desegregation program applies the basic theories of social organization of schools to study the internal conditions of desegregated schools, the feasibility of alternative desegregation policies, and the interrelations of school desegregation with other equity issues such as housing and job desegregation. The School Organization program is currently concerned with authority-control structures, task structures, reward systems, and peer group processes in schools. It has produced a large-scale study of the effects of open schools, has developed Student Team Learning Instructional processes for teaching various subjects in elementary and secondary schools, and has produced a computerized system for school-wide attendance monitoring. The School Process and Career Development program is studying transitions from high school to post secondary institutions and the role of schooling in the development of career plans and the actualization of labor market outcomes. The Studies in Delinquency and School Environments program is examining the interaction of school environments, school experiences, and individual characteristics in relation to in-school and later-life delinquency.

The Center also supports a Fellowships in Education Research program that provides opportunities for talented young researchers to conduct and publish significant research, and to encourage the participation of women and minorities in research on education.

This report, prepared by the Studies in School Desegregation program, examines the effects of cultural maintenance by Chicano families and students on psychological characteristics and college achievement of the students.

Abstract

Cultural maintenance has traditionally been perceived as an aberrant phenomenon that discourages the socioeconomic success of minority groups. Yet, there is growing evidence that indiscriminate acculturation results in adverse psychological and academic effects and that maintenance yields positive effects. An exploratory survey was undertaken in 1977 in which 1,573 Chicano college students from Texas participated. Path analysis data reveal that high family Spanish usage yields both negative direct effects and positive indirect effects on the psychological and achievement characteristics of offspring. The negative effects are partially offset or sometimes reversed when such homes promote the bilingualism of children. However, it is an offspring's bilingualism which is a more consistent and stronger determiner in the production of positive effects.

BILINGUALISM, CONFIDENCE, AND COLLEGE ACHIEVEMENT

INTRODUCTION

It is argued by many that in a culturally pluralistic society's movement toward the "nation-state," reinforcement systems are typically established to coerce ethnically dissimilar communities to acculturate and become socio-economically productive (Barth and Noel, 1980; Gordon, 1964). Minority groups that, for whatever reasons, resist inclusion are often perceived by culturally dominant (especially economically advantaged) society members as deviants and their nonacculturation as largely self-imposed and a crucial determiner of their psychological alienation and socioeconomic deprivation (Ryan, 1971)

For example, the Chicano, the second largest minority group in the United States, has maintained its linguistic and other cultural characteristics (Carter and Segura, 1979; Grebler et al., 1970). Rogers (1971) and Coleman (1966) have found language maintenance among Chicanos associated with less confident psychological characteristics (lower self-esteem, locus of control, and motivation) and it has also been linked with lower educational success (Carter and Segura, 1979). Thus, many have concluded that any and all manifestations of cultural maintenance lead to negative effects.

Other researchers have argued that indiscriminate acculturation can have damaging effects. Garcia (1980) has submitted that it is erroneous to believe that capitalistic societies promote the total inclusion of economically exploited groups. Members from such communities often endure more intense pressure to devalue and eradicate their cultural traits, and idealize and adopt those of the culturally dominant population (Barth, 1969). Negative psychological and socioeconomic outcomes result because the required changes are difficult to carry out. Some degree of,

cultural maintenance may be beneficial because it minimizes the adverse effects of total acculturation and increases the potential for achievement in "both worlds" (Garcia, 1980).

Even though research on bilingualism is still inconclusive, it has been shown that Chicano pupils enrolled in bilingual education programs have higher levels of self-esteem (Firme, 1969; Del Buono, 1971), and achievement test scores (Proa, 1981; Garcia, 1974) than those not enrolled in such programs. Chicano college students from high Spanish usage (or Spanish dominant) homes have demonstrated higher levels of self-esteem and achievement than those from less Spanish-speaking families (Long and Padilla, 1971).

There is reason, therefore, to question the contentions of those who see all forms of cultural maintenance as being socially aberrant and harmful. This study examines the relative effects of family and offspring cultural maintenance upon offspring psychological characteristics and college achievement. Because of the early-level nature of current research, it cannot be assumed that either the home's or offspring's maintenance traits yield consistently positive or negative effects on such offspring characteristics or whether these impacts continue to be significant among college students. This study attempts to clarify these issues.

METHOD

Sample

Using the student directories from 13 colleges, the names of Spanish-surnamed pupils in each directory were first assigned unique consecutive identification numbers. After deciding on the total number of students to select from each institution, random numbers were drawn from a book of random digits in order to select the number of students desired from each school. A grand total of 3,000 Chicano college students received questionnaires. As many as five follow-up mail contacts were made (including a second questionnaire).

in order to encourage participation. Table 1 demonstrates that 1,573 Chicano college students (or 52%) responded in the spring, 1977 survey.

Table 1 About Here

The sample derived was comprised of roughly equal numbers of males and females. Respondents ranged from 17 to 62 years of age with the median age of 22. About 42% came from home communities of less than 50,000 people, 53% from hometowns of 50,000 or more, and 5% did not reveal their home communities. The median years of education for mothers (of respondents) was 6.5 and 7.0 years for fathers. The median range of yearly income of the homes reared in ranged from \$6,000 to \$7,999. About 50% of respondents were lower classmen (freshmen and sophomores), 35% upper classmen, 8% graduate-professional students, and the remainder did not identify their academic status. Finally, 68% were full-time and 32% part-time students.

Measures

An exploratory multipurpose questionnaire was formulated which was 41 pages in length and took about an hour to complete. The specific measures analyzed in this study are described below:

1. The home's income (INCOME): A question asked subjects (S's) to select an income range category from the 16 categories offered describing the total yearly income of their families when they, the respondents, were 16 years of age. A high score (15) indicates high income.
2. The home's Spanish usage (USAGE): A measurement scale containing three items (each item offering six responses) asked S's to assess the percentage range of the time Spanish was spoken by particular family members--mother, father, and siblings. A high score (18) indicates high usage in the home.

- 4
3. Spanish fluency (FLUENCY): A single question offering seven responses asked S's to evaluate their own Spanish fluency. A high score (7) indicates high fluency.
 4. Self-Esteem (ESTEEM): A scale containing six Likert items (each item offering seven responses) asked S's about their self-worth. A high score (42) indicates high self-esteem.
 5. Educational and income plans (PLANS): A scale containing three items (each item having a different number of responses) asked S's to describe their educational and income plans. A socioeconomic plans scale was desired but the occupation question failed tests for internal consistency (described in the statistical analysis section) and so it was excluded. Because each item was equally weighted, scale totals ranged from 0.966 to 3.000 with the latter representing more ambitious plans.
 6. Assuredness of achieving plans (ASSURED): A scale containing three items (each item offering six responses) asked S's to describe how sure they were that they could achieve their educational, occupational, and income plans. A high score (18) indicates high assuredness.
 7. Locus of control (CONTROL): A scale containing three items (each item offering seven responses) asked S's to assess how much control they felt they had over their lives. A high score (21) indicates high locus of control (or nonfatalism).
 8. College grade point average (GPA): A question asked S's to select a grade point average from a range of 12 presented. A high score (12) indicates a high grade point average.

It is important to recognize that the FLUENCY variable is used here not only as an indicator of Spanish fluency, but also as a rough measure of bilingualism. There was very little response variation to a question which asked subjects to evaluate their English fluency. That question had a response scale

identical to that used in the FLUENCY item described above, although a high score (7) represented high English fluency. As might be expected of a Chicano college student sample, most felt that they were very fluent in English (mean = 6.5 and standard deviation = 0.969). Table 2 demonstrates that responses to the FLUENCY question were more varied. Thus, these findings demonstrate that there was probably variation in the level of bilingualism among respondents.

Experimental Hypotheses

It was predicted that holding family income (INCOME) constant, high family Spanish usage (USAGE) and/or high offspring Spanish fluency (FLUENCY) will result in higher offspring self-esteem (ESTEEM), more ambitious socioeconomic plans (PLANS), greater assuredness of achieving such plans (ASSURED), greater locus of control (CONTROL), and higher grades in college (GPA).

Statistical Analysis

An earlier version of the questionnaire was pretested on a mail survey sample of 124 Chicano college students nine months prior to the final study. First, the frequency distributions of responses to questions (or items) in the prestudy questionnaire were examined to make certain they had sufficient variation.

Second, the internal consistency of measurement scales was evaluated by conducting factor analysis on the items of a given scale. In accordance with the guidelines set forth by Mulaik (1972), and in particular by Kelley (1975), only those items loading at least at the .4 level with other same-scale items were retained in the scale. Factor analyses continued until it was no longer possible to separate same-scale items into distinct factors.

Third, Pearson product moment correlation coefficients were examined to make certain that surviving scale items were highly correlated with each other and that they were related with nonscale items in the same direction

and at a roughly similar level, as suggested by Selltitz et al. (1976) and Kelley (1975): All of the statistical tests carried out in the prestudy were repeated when the final survey data was collected to further guarantee internally consistent measurement scales.

The final measurement scales were constructed by recoding the response scales of some items so that a high score always represented a high value of a given phenomenon. Scores were then summed with each item receiving equal weight. To avoid penalizing respondents who did not answer one or more items in a scale, the respective item's mean value was assigned to an unanswered question.

Multiple regression data were generated employing the technique proposed by Duncan et al. (1972) and Alwin and Hauser (1975), so that the total, direct, and indirect effects of family Spanish usage and offspring Spanish fluency on offspring psychology, and/or academic success could be studied. However, the approach was modified so that both individual variable indirect effects (typically analyzed in path analysis) and item-set indirect effects could be calculated, as described by Alexander et al. (1976) and Garcia (1980). Item-set indirect effects are useful here in that they determine whether antecedent variables produce indirect effects on GPA via the set of psychological variables, that is, via ESTEEM, PLANS, ASSURED and CONTROL as an aggregate mediating variable. Finally, even though there are no established methods for ascertaining the significance levels of indirect effects, it was decided that indirect effects greater than or equal to .04 would be given closer attention.

FINDINGS

Table 2 shows that problems with multicollinearity were likely to be present but not overwhelming given the Pearson product moment correlations

7

between USAGE and INCOME, and between USAGE and FLUENCY. Thus, high Spanish usage families tended to have lower yearly incomes and they also produced more Spanish fluent children. However, the magnitude of the aforementioned correlations was far from unity. Secondly, variables in each correlated independent variable pair tended to be correlated differently in terms of magnitude and/or direction with common other variables. And third, in other tests, each independent variable tended to yield path coefficients in the same direction and roughly similar intensity whether they were placed in the regression equation by themselves or with one or both of the other independent variables.

The R^2 's demonstrate that the model achieved only minimal explanatory success with regard to ESTEEM, PLANS, ASSURED, and CONTROL, while greater success was achieved with respect to GPA, and especially FLUENCY. It is unlikely that the low amount of variation explained in the former was due to an absence of response variation in the variables in the model (note the standard deviations). It is more probable that the unreliability of the variables (especially those with the lowest reliabilities which also had the lowest R^2 's -- ESTEEM, PLANS, ASSURED, and CONTROL) coupled with the causal insignificance of the independent variables accounted for such results.

Table 2 About Here

The model was more effective in achieving its main goal of ascertaining the causal roles USAGE and FLUENCY. Not surprisingly, Table 3 shows that the largest effect yielded in the model was that made on FLUENCY by USAGE. Thus, the more a family was reported to speak Spanish, the more fluent offspring assessed themselves to be in Spanish. The home is the most important agent of socialization in the linguistic development of children and the results of this study support this.

Table 3 About Here

USAGE yielded consistently negative direct effects and positive indirect effects on the remaining dependent variables. The negative direct effects demonstrate that high Spanish usage homes adversely affected an offspring's level of self-esteem, socioeconomic plans, assuredness of achieving such plans, and locus of control, while no effect was produced on an offspring's grade point average. Such impacts occurred probably because most high Spanish usage families were not bilingual, but largely Spanish monolingual in nature (which is what a high score on the USAGE scale actually measured).

Future research may in fact demonstrate that high family Spanish usage produces such impacts because of adverse forces originating both from outside and within the home. Families that maintain their native tongue probably face greater acculturative pressure and socioeconomic discrimination and an offspring's level of confidence may be negatively affected. In response to such social pressures, Spanish dominant families may stress the total maintenance of the culture, and this may cause bilingual children difficulty in resolving the apparent conflict between the wishes of the home and their linguistic identity. However, at this point, these explanations are highly speculative.

USAGE did not yield a significant direct effect on GPA probably because it is not reasonable to expect very many home characteristics to directly affect an offspring's achievement in college (also note the insignificant direct effect of INCOME upon GPA). At such a high level of education, many students are largely independent of familial control. It is more likely that the characteristics of a home would, at best, produce significant indirect effects via some offspring characteristics (e.g. bilingualism, social psychological traits, etc.) because the latter would be more immediate determiners of academic success. Thus, traits originally formed in the home might affect

certain offspring behaviors when a young adult is on his own, but it will be the offspring's characteristics that will mediate the effects of the home.

The positive indirect effects of USAGE via FLUENCY on all of the dependent variables in the model confirm the importance of the intervening role of offspring characteristics in transmitting the effects of the home. These effects reveal that when Spanish dominant homes enhanced the Spanish fluency of children, the offspring developed higher levels of self-esteem, more ambitious socioeconomic plans, greater assuredness of achieving such plans, greater locus of control, and better grades in school.

In light of the negative direct effects analyzed previously, it ought to be all the more apparent that the Spanish dominant home can have both adverse and affirmative effects on its children. Such homes negatively affect the psychological traits of offspring directly, but the positive indirect effects suggest that when the bilingualism of children is enhanced, the bilingualism will in turn lead to positive psychological and academic characteristics.

Nevertheless, the total effects yielded by USAGE reveal that the overall impacts on four out of five of the dependent variables were negative. Such effects occurred because the absolute value of a given negative impact was greater than that of the positive indirect effect in each case. Thus, the effect of the home's Spanish dominance was slightly negative in the long run with respect to most of the offspring traits included in the model.

The importance of FLUENCY as a positive intervening event is particularly evident in the contrasting significant indirect effects of USAGE on GPA. According to the indirect effect via FLUENCY, if high Spanish usage homes enhanced the Spanish fluency of offspring, then higher grade point averages resulted. However, the negative item-set indirect effect via psychology

demonstrates that high Spanish usage homes could not alone enhance the overall confidence, and as a result, the achievement of offspring without first promoting the Spanish fluency of offspring.

Table 3 also shows that, in contrast to USAGE, FLUENCY yielded consistently positive and usually significant total, direct, and/or indirect effects on the dependent variables. Specifically, the positive direct effects demonstrate that, as expected, subjects who were more fluent in Spanish developed higher levels of self-esteem, more ambitious socioeconomic plans, greater assuredness of accomplishing such plans, greater locus of control, and higher grades in college.

These findings further underscore the importance of the offspring's bilingualism as the most essential determiner in the psychological development and academic success of offspring. As speculated earlier, bilingualism might not only promote successful interaction in "both worlds," it may also be an indication of a greater respect for one's cultural identity, and this could result in greater self-confidence. And as alluded to earlier, the greater magnitude, consistency, and interpretability of the causal impacts of FLUENCY may be due to the more immediate causal role of an offspring's own cultural characteristics in adulthood.

The total effect of FLUENCY on GPA demonstrates that the sum of the component effects (direct and indirect) was strong and positive. The significant affirmative direct effect reveals that subjects who were more fluent in Spanish earned higher grades, even after important personality characteristics were taken into account. Even though this relationship is in the predicted direction, its statistical significance was, admittedly, not actually expected. It was felt that FLUENCY would only yield significant indirect effects on GPA via psychology (via individual variables and/or via the item-set) because it was predicted that Spanish fluency would have only direct psychological advantages

and that the latter would finally enhance achievement.

In light of the direct effect, however, it may be speculated that Spanish fluency may have some unanticipated direct and unmediated educational advantages. Some bilingual education advocates have argued, for example, that Spanish language ability promotes the learning of English. Further, it is possible that having communicative skills and experiences in two ethnic communities increases the amount of knowledge learned and that this greater knowledge is applied in school.

Figure 1 shows that FLUENCY did not yield any individual-variable indirect effects on GPA via any of the psychological variables because none of direct effects involved were of sufficient magnitude. It is interesting, however, that FLUENCY yielded a significant item-set indirect effect via the psychological variable aggregate (examine Table 3). Thus, an offspring's Spanish fluency led to higher grades only if fluency promoted a subject's overall confidence rather than just a specific psychological characteristic. It may be that each individual psychological trait is too limited and insignificant a part of the general self-confidence of subjects for each to be involved in mediating significant effects of this particular nature.

Figure 1 About Here

Findings not central to this study were consistent with those of other studies. For example, INCOME was negatively related with USAGE and FLUENCY, positively related with PLANS and ASSURED, and INCOME also yielded positive indirect effects on GPA via PLANS and psychology. Further, all of the psychological variables produced statistically significant positive effects on GPA.

CONCLUSION

Analysis of data from a 1977 mail survey of Chicano college students from Texas has shown that high family Spanish usage yields both negative direct

effects and positive indirect effects on the psychological and academic success characteristics of offspring. It appears that negative effects are partially offset or sometimes reversed when such homes promote the Spanish fluency of children. Thus, a Spanish dominant home cannot be expected to yield many positive effects if it does not promote the bilingualism of offspring which is the most essential ingredient in allowing the home to manifest affirmative traits in children. However, it is the bilingualism of offspring that is the most important determiner in the production of more self-confident and academically successful characteristics in children.

Although the results were analyzed from the standpoint of Spanish-speaking homes and offspring, the findings also lead to conclusions about English-speaking counterparts. English-dominant Chicano families may also yield an intricate array of impacts on the psychological and achievement characteristics of offspring. The data suggest, however, that in comparison to bilingualism, English monolingualism produces more and larger negative effects. Above all, it may be the non-Spanish fluency characteristics of such offspring which are the more immediate and stronger determiners of the less desirable psychological and academic traits which come about.

In general, the findings suggest that the role of a family's linguistic socialization in the psychological and academic development of children is a very complex one. The varied effects may be an indication of just how "marginal" the Chicano family really is in American society. That is, perhaps it is because there are push-pull forces toward acculturation and cultural maintenance originating both from outside and within the Chicano community that families yield such discrepant effects. This does not mean that there is some inherent flaw in the Chicano family. Rather, the effects may be an indication of how such families are attempting to adjust to clashing social forces within a pluralistic and often hostile society.

To an extent, it is surprising that such family and offspring cultural characteristics continue to be as important as they are among college-age students. Previous research has tended to focus on the roles of such variables among younger cohorts, especially within the context of school settings (Lopez, 1976). Too many investigators have erroneously presumed that "problems" in cultural identity are supposedly totally or largely resolved before adulthood, especially among the socioeconomically mobile who are thought to be survivors of an earlier cultural selection process (Lopez, 1976).

Investigators have probably underestimated the continuing importance of cultural variables among Chicano adults. Some authorities have argued that as socioeconomically mobile minority individuals venture beyond the security of the ethnic/racial community and family, there is often an increased rather than decreased need to maintain such ties (Pfeifer and Sedlacek, 1974; Lopez, 1970). Further, it is also possible that such individuals may face more potent forms of discrimination (than less mobile ethnic group members) because the successful minority group subject represents a greater economic and political threat to the status quo. Such forces may also encourage the maintenance of community and primary group support systems.

An important qualification must be made that it is not correct, given the findings of the study, to view any and all manifestations of non-biculturalism whether in the home and/or offspring, as inevitable determiners of degenerated psychological and academic outcomes. Certainly, the sample of less bicultural college students surveyed in this investigation have demonstrated that they had sufficient levels of confidence and educational skills to have survived public school and push-pull forces which were probably stronger earlier on--and inevitably "attend" college (an achievement in and of itself which only very few Chicanos have been able to accomplish). All that has been argued in this study is that, comparatively speaking, biculturalism will have more

beneficial effects.

In general, this study has shown that cultural maintenance probably continues to have noteworthy effects among Chicano college students. Subsequent investigations may find that maintenance yields similar effects among other groups of adults within this population. However, it is also likely that studies of educationally mobile Chicano adults (such as this one) might 'inherently' limit the amount of variation and interrelationships among the types of phenomena investigated in this exploratory study. Research on younger cohorts may yield different results.

REFERENCES

- Alexander, Karl L.; Bruce K. Eckland, and Larry J. Griffin.
1976 "The Wisconsin model of socioeconomic achievement: A replication." *American Journal of Sociology* 81:324-342.
- Alwin, Duane F. and Robert M. Hauser.
1975 "The decomposition of effects in path analysis." *American Sociological Review* 40:37-47.
- Barth, Fredrik.
1969 "Introduction." Pp. 9-38 in F. Barth (ed.), *Ethnic Groups and Boundaries: The Social Organization of Cultural Differences*. Boston: Little, Brown, and Company.
- Barth, Ernest A. T. and Donald L. Noel.
1980 "Conceptual frameworks for the analysis of race relations: An evaluation." Pp. 416-437 in T. Pettigrew (ed.), *The Sociology of Race Relations: Reflection and Reform*. New York: The Free Press.
- Carter, Thomas P. and Roberto D. Segura.
1979 *Mexican Americans in School: A Decade of Change*. New York: Collège Entrance Examination Board.
- Coleman, James S. et al.
1966 *Equality of Educational Opportunity*. Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education.
- Del Buono, Xavier A.
1971 *The Relationship of Bilingual/Bicultural Instruction to the Achievement and Self-Concept of Seventh Grade Mexican-American Students*. Unpublished Ph.D. dissertation, Michigan State University.
- Duncan, Otis Dudley, David L. Featherman, and Beverly Duncan.
1972 *Socioeconomic Background and Achievement*. New York: Seminar Press.
- Firme, Theresa P.
1969 *Effects of Social Reinforcement on Self-Esteem on Mexican-American Children*. Unpublished Ph.D. dissertation, Stanford University.
- Garcia, Homer D., C.
1980 *Chicano Social Class, Assimilation, and Nationalism*. Unpublished Ph.D. dissertation, Yale University.
- Garcia, Ricardo L.
1974 "Mexican-American bilingualism and English language development." *Journal of Reading* 17:467-473.

Gordon, Milton M.

- 1964 Assimilation in American Life: The Role of Race, Religion, and National Origins. New York: Oxford University Press.

Grebler, Leo, Joan W. Moore, and Ralph C. Guzman.

- 1970 The Mexican-American People: The Nation's Second Largest Minority. New York: Free Press.

Kelley, Jonathan.

- 1975 "Tests for the formulation of measurement scales." Methodology Seminar, Department of Sociology, Yale University.

Long, K. K. and A. M. Padilla.

- 1971 "Evidence for bilingual antecedents of academic success in groups of Spanish-American college students." Journal of Cross-Cultural Psychology 11:400-406.

Lopez, David E.

- 1976 "The social consequences of Chicano home/school bilingualism." Social Problems 24:234-246.

Lopez, Richard E.

- 1970 Anxiety, Acculturation, and the Urban Chicano: The Relationship Between Stages of Acculturation and Anxiety Level of E.O. P. Students. Berkeley: California Book Company.

Mulaik, Stanley A.

- 1972 The Foundations of Factor Analysis. New York: McGraw Hill.

Pfeiffer, C. Michael, Jr. and William E. Sedlacek.

- 1974 "Predicting Black student grades with non-intellectual measures." Journal of Negro Education 43:67-76.

Proa, Ray.

- 1981 "NACBE urges Congress: Equal education through bilingual education." IDRA Newsletter: July.

Rogers, Dorothy D. B.

- 1971 Personality Traits and Academic Achievement among Mexican-American Students. Unpublished Ph.D. dissertation, The University of Texas at Austin.

Ryan, William.

- 1971 Blaming the Victim. New York: Random House.

Selltiz, Claire, Lawrence S. Wrightsman, and Stuart W. Cook.

- 1976 Research Methods in Social Relations. New York: Holt, Rinehart, and Winston.

Table 1: The Number of Chicano College Students Who Received Questionnaires and Returned Them at Each Participating Institution, Spring 1977.

<u>College or University</u>	<u>No. Sent</u>	<u>No. Returned</u>	<u>% Return</u>
Juarez-Lincoln University Austin, San Antonio, and Valley branches	116	65	55
Our Lady of the Lake College San Antonio, Texas	175	101	58
Pan American University Edinburg, Texas	175	103	58
San Antonio College San Antonio, Texas	400	179	45
Southwest Texas Junior College Uvalde, Texas	454	236	52
South West Texas State University San Marcos, Texas	175	80	46
St. Mary's University San Antonio, Texas	175	104	59
Texas A & I University Kingsville, Texas	250	130	52
Texas Southmost College Brownsville, Texas	175	71	40
Trinity University San Antonio, Texas	200	118	59
University of Texas at Austin Austin, Texas	405	185	46
University of Texas at San Antonio San Antonio, Texas	250	140	56
Yale University* New Haven, Connecticut	50	34	68
Returned anonymously		27	
Total	3,000	1,573	52

*

Only Chicano college students from Texas were sent questionnaires at this out-of-state institution.

Table 2: Intercorrelations, Explained Variation (R^2 's), Means, Standard Deviations, and Reliabilities for the Variables Entered into the Bilingualism Model: Chicano College Students of Texas, Spring, 1977.

	USAGE	INCOME	FLUENCY	ESTEEM	PLANS	ASSURED	CONTROL	GPA
INCOME	-.418							
FLUENCY	.549	-.286						
ESTEEM	.018	-.023	.093					
PLANS	-.156	.242	-.014	.135				
ASSURED	-.079	.079	.028	.235	.281			
CONTROL	-.154	.090	.000	.220	.303	.193		
GPA	-.034	.042	.058	.141	.291	.215	.171	--
R^2	--	--	.306	.011	.072	.017	.036	.118
Mean	12.600	4.789	5.410	35.240	2.032	15.400	12.825	10.062
Std. Dev:	4.193	2.854	1.744	6.378	.345	2.450	4.988	2.772
Reliability	.856**	.964*	.939*	.745**	.696**	.786**	.656**	.940*

* Test-retest reliability estimates (Pearson correlations) derived from a sample of Chicano college students (N=31).

** Cronbach's alpha coefficient of internal reliability for a measurement scale.

Table 3: Interpretations of Effects in a Model of Bilingualism:
Chicano College Students of Texas, Spring, 1977.

Dependent Variable	Independent Variables	Total Effect	Direct Effect	Indirect Effect Via FLUENCY	Effect Via Psychology
FLUENCY	USAGE		.521***	--	--
	INCOME		-.069***	--	--
ESTEEM	USAGE	.007	-.056*	.063	--
	INCOME	-.020	.012	-.032	--
	FLUENCY		.120***	--	--
PLANS	USAGE	-.066**	-.129***	.063	--
	INCOME	.215***	.223***	-.008	--
	FLUENCY		.120***	--	--
ASSURED	USAGE	-.056*	-.112***	.056	--
	INCOME	.055*	.063**	-.008	--
	FLUENCY		.107***	--	--
CONTROL	USAGE	-.142***	.207***	.065	--
	INCOME	.031	.039	-.008	--
	FLUENCY		.125***	--	--
GPA	USAGE	-.019	-.022*	.059	-.056
	INCOME	.034	-.019	.000	.053
	FLUENCY	.113***	.050*	--	.063
	ESTEEM		.051***	--	--
	PLANS		.242***	--	--
	ASSURED		.112***	--	--
	CONTROL		.070***	--	--

*

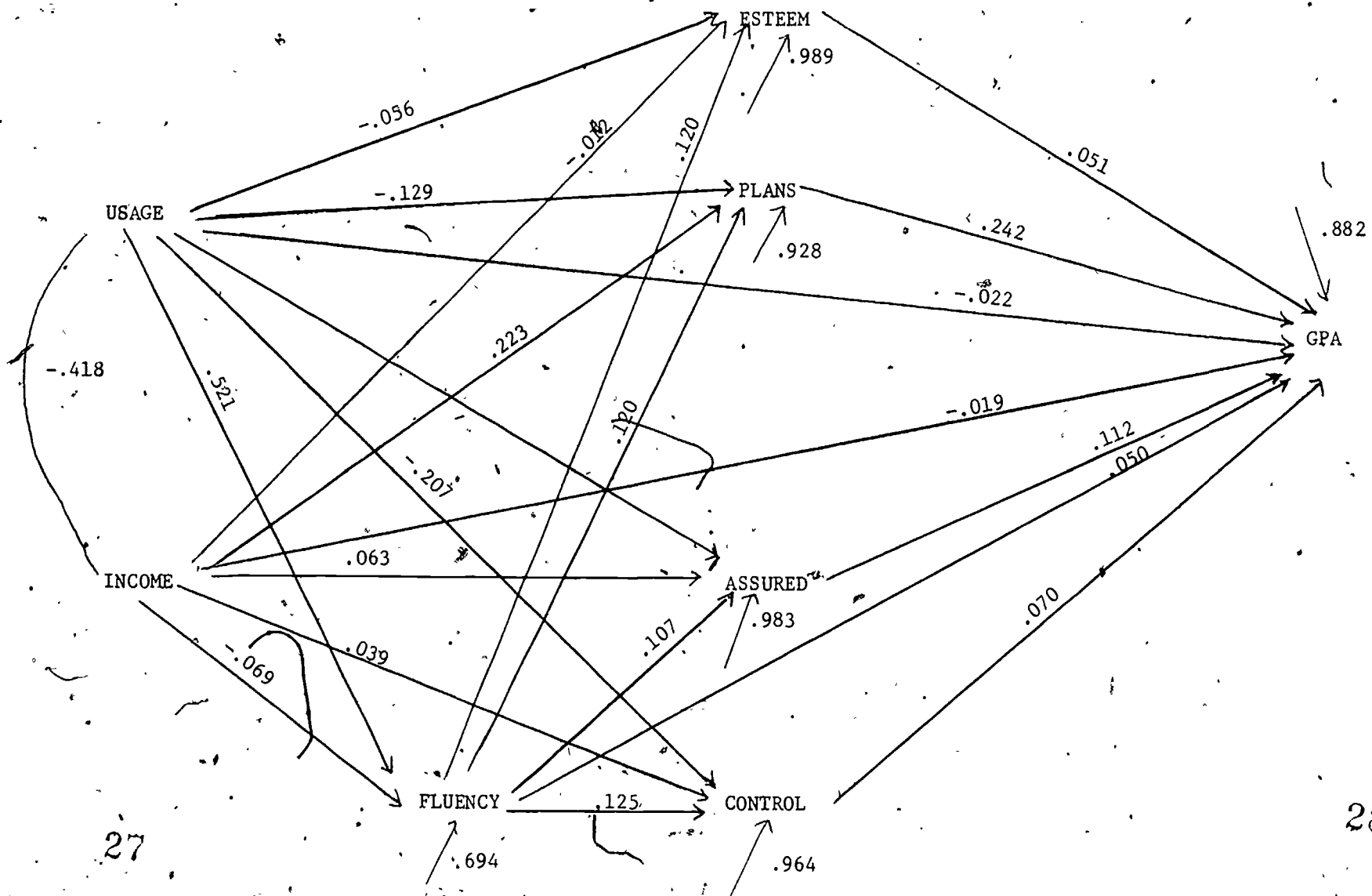
$p \leq .05$

**

$p \leq .01$

$p \leq .001$

Figure 1: A Path Model of Bilingualism: Chicano College Students of Texas, Spring, 1977..



27

28